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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,996	07/05/2006	Itshak Ben Yesha	7044-X06-010	4324

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EXAMINER	
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ART UNIT	PAPER NUMBER
3766	

MAIL DATE	DELIVERY MODE
12/23/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/596,996	YESHA, ITSHAK BEN	
	Examiner	Art Unit	
	LUTHER G. BEHRINGER	3766	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 June 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/4/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the communication received on 11/19/2008 concerning application no. 10/596996 filed on 07/05/2006.

Response to Arguments

2. Applicant's arguments filed 11/19/2008 have been fully considered but they are not persuasive. Applicant argues the lack of multiple sensors in the disclosures of Fraden and Miller and an ambiguity between applicant's definition of horizontal and that used by Fraden. However, Miller teaches incorporation of sensors into legs, or a bed or crib (Col. 3, Lines 26 – 30), inherently requiring multiple sensors. In addition, the technique of determining horizontal translation of the center of gravity is disclosed in Fraden. Support for utilizing this definition of horizontal is found in applicant's specification on page 9, fourth paragraph.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim(s) 3, 4, 9, 10, 11, 13, 14, 18, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Miller (US 5,796,340)** in view of **Fraden (US 4,509,527)**.

Regarding **claim(s) 11 and 22**, Miller discloses a system and method for non-invasive monitoring of subject heartbeat rate, said system and method comprised of:

collecting vertical pressure signals comprising vertical pressure measurements along time received from at least two sensors located beneath the subject's body at different locations (Col. 3 Lines 23 – 29); but fails to disclose creating a horizontal signal exhibiting horizontal mass movements over time attributed to the subjects blood circulation; and analyzing the horizontal signal for extracting the subject's heartbeat rate.

However, Fraden teaches creating a horizontal signal exhibiting horizontal mass movements over time attributed to the subjects blood circulation; and analyzing the horizontal signal for extracting the subject's heartbeat rate (Col. 5 Line 63 – Col. 6, Line 3).

5. A person of ordinary skill in the art, upon reading the reference, would have recognized the desirability of creating a horizontal signal exhibiting horizontal mass movements to enable extraction of the subjects heartbeat rate. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Miller to include creating a horizontal signal exhibiting horizontal mass movements as taught by Fraden to enable a passive means by which a patient's heartbeat rate may be acquired.

With regard to **claim(s) 3 and 13**, Miller in view of Fraden discloses the step of identifying the respiration rate (Miller: Column 3, Lines 23 – 29).

Regarding **claim(s) 4 and 14,** Miller in view of Fraden inherently discloses a system and method further comprising the step of calculating a sum signal comprising the sum of at least two vertical pressure signals and filtering and analyzing the

calculated sum signal in combination with the horizontal signal for identifying and detecting the heartbeat rate and respiration rate (Miller: Column 5, Lines 26 – 30).

With regard to **claim(s) 9 and 18,** Miller in view of Fraden discloses at least one sensor is located beneath the lower part of the subject's body and at least one sensor is located beneath the upper part of the subject's body (Fraden: Col. 3, Line 65 – Col. 4, Line 2).

Regarding **claim(s) 10 and 20,** Miller in view of Fraden discloses wherein the horizontal signal represents the horizontal movements of the subject and the analyzing includes detection of blood circulation (Miller: Column 3, Lines 23 – 29).

6. Claim(s) 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Miller (US 5,796,340)** in view of **Fraden (US 4,509,527)** in view of **Sackner et al. (US 2002/0032386)**.

Regarding **claim(s) 2 and 12,** Miller in view of Fraden fails to disclose the step of filtering the horizontal signals for reducing background noise and respiratory artifact and other body movements in accordance with predefined signal frequency band values.

However, Sackner et al. teaches the step of filtering the horizontal signals for reducing background noise and respiratory artifact and other body movements in accordance with predefined signal frequency band values (Page 12, Paragraph [0114]).

7. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the disclosure of Miller in view of Fraden with the step of reducing background noise and respiratory artifact as taught by Sackner et al. since it is

well known in the art that doing so would increase the ease and reliability of the interpretation of the data delivered by Miller in view of Fradens invention.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Miller (US 5,796,340)** in view of **Fraden (US 4,509,527)** in view of **Cornish et al. (US 2006/0247543)**.

Regarding **claim 6,** Miller in view of Fraden fails to disclose the step of calibration for calculating the pre-defined filter signal frequency band values, wherein calibration is based on the FFT algorithm.

However, Cornish et al. teaches comprising the step of calibration for calculating the pre-defined filter signal frequency band values, wherein calibration is based on the FFT algorithm (Paragraphs [0092] and [0093]).

9. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the disclosure of Miller in view of Fraden with the teachings of Cornish et al. since it is well known in the art that doing so increases the reliability of the invention as disclosed by Miller in view of Fraden.

10. Claim(s) 5, 7, 8, 15, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Miller (US 5,796,340)** in view of **Fraden (US 4,509,527)** in view of **Porges (US 4,510,944)**.

With regard to **claim(s) 5 and 15,** Miller in view of Fraden fails to disclose the step of selecting the horizontal signal having the largest integral value of all horizontal signals, wherein the identification and detection of the heartbeat rate is based on said selected horizontal signal.

However, Porges teaches the step of selecting the horizontal signal having the largest integral value of all horizontal signals, wherein the identification and detection of the heartbeat rate is based on said selected horizontal signal (Col. 7, Lines 29 – 40).

11. A person of ordinary skill in the art, upon reading the reference, would have recognized the desirability of providing a peak detector to aid in determining a heart rate. Thus, it would have been obvious to a person having ordinary skill in the art at the time of the invention to modify Miller in view of Fraden to include a peak detector as taught by Porges, since doing so would aid in the detection of a patients heart rate.

Regarding **claim(s) 7 and 17,** Miller in view of Fraden fails to disclose wherein the filtering is achieved by a high pass filter, wherein the cut off frequency is twice as a pre-defined heart rate.

However, Porges teaches wherein the filtering is achieved by a high pass filter (Column 1, Lines 57 – 61), wherein the cut off frequency is twice a pre-defined heart rate (Column 13, Lines 5 – 15).

12. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the disclosure of Miller in view of Fraden with the teachings of Porges since it is well known in the art that doing so increases the reliability of the invention as disclosed by Miller in view of Fraden.

13. Claim(s) 8 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Miller (US 5,796,340)** in view of **Fraden (US 4,509,527)** in view of **Sackner et al. (US 2002/0032386)** in view of **Porges (US 4,510,944)**.

Regarding **claim(s) 8 and 19,** Miller in view of Fraden in view of Sackner fails to disclose wherein the analyzing includes identifying peak values of the filtered signal.

However, Porges teaches wherein the analyzing includes identifying peak values of the filtered signal (Column 8, Lines 37 – 41).

14. It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the disclosure of Miller in view of Fraden in view of Sackner with the teachings of Porges since it is well known in the art that doing so would aid in the reliability of a diagnosis of a patient utilizing the invention as disclosed by Miller in view of Fraden in view of Sackner.

15. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Miller (US 5,796,340)** in view of **Fraden (US 4,509,527)** in view of **Sackner et al. (US 2002/0032386)** in view of **Cornish et al. (US 2006/0247543)**.

Regarding **claim 16,** Miller in view of Fraden in view of Sackner fails to disclose a calibration module for calculating the pre-defined signal frequency band values, wherein calibration is based on the FFT algorithm.

However, Cornish et al. teaches comprising the step of calibration for calculating the pre-defined filter signal frequency band values, wherein calibration is based on the FFT algorithm (Paragraphs [0092] and [0093]).

It would have been obvious to a person having ordinary skill in the art at the time of the invention to modify the disclosure of Miller in view of Fraden in view of Sackner with the teachings of Cornish et al. since it is well known in the art that doing so

increases the reliability of the invention as disclosed by Miller in view of Fraden in view of Sackner.

16. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Miller (US 5,796,340)** in view of **Fraden (US 4,509,527)** further in view of **Bridger et al. (US 6,491,647)**.

Regarding **claim 21,** Miller in view of Fraden fails to disclose wherein the sensors are integrated within a single rigid housing.

However, Bridger et al. teaches wherein the sensors are integrated within a single rigid housing (Column 15, Lines 39 – 43).

17. It would have been obvious to a person having ordinary skill in the art at the time of the invention to use the sensors integrated within a single rigid housing as taught by Bridger et al. to modify the invention as disclosed by Miller in view of Fraden. Using the known technique of a rigid housing multi sensor package to provide uniform packaging and prevent device modification of the invention as disclosed by Miller in view of Fraden would have been obvious to one of ordinary skill.

Conclusion

18. This is a continuation of applicant's earlier Application No. 10/596996. All claims are drawn to the same invention claimed in the earlier application and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the earlier application. Accordingly, **THIS ACTION IS MADE FINAL**

even though it is a first action in this case. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no, however, event will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LUTHER G. BEHRINGER whose telephone number is (571)270-3868. The examiner can normally be reached on Mon - Thurs 8:00 - 5:30; 2nd Friday 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Layno can be reached on (571) 272-4949. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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